3D Maze Project Report: Teamwork, Challenges, and Solutions

**Title:** COSC3306 Assignment 3 (3D Maze)

**Team Name:** Andrew Jackson (individual)

**Member Names and Student IDs:**

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**Course:** COSC3306

**Instructor:** Professor Lin

**Date:** March 27, 2024

# Introduction

For this assignment I created a 3D maze using HTML and the Three.js Javascript library. I took a bit of inspiration from the example provided in the assignment description, but also added a few things of my own to make it unique. I completed this assignment as an individual and not as part of a team.

# Teamwork Overview (If applicable)

**Team Strategy:** Not applicable

**Communication Methods:** Not applicable

# Implementation and Challenges

**Technical Challenges and Solutions**

One technical challenge that was particularly difficult for me was getting the imports to work for FirstPersonControls, OBJLoader and MTLLoader. For previous assignments it was not required to import things the way I had to for this one. The online documentation on the Three js official website was also lacking in information. I had to rely on tools like StackOverflow to solve this problem. I also had trouble with the OBJLoader and MTLLoader, but was able to solve these issues by looking at the official documentation as well as examples.

**Texture Implementation & Maze Design:** One challenge I had was getting the TextureLoader to load the image correctly. I did not realize at first that the image had to be in the same directory as the project itself. I also had to use the local server program Vite to ensure that these images would work. Another issue was designing the walls of the maze. It was tough to see exactly where the walls were being placed. To solve this, I changed the camera to look at the maze from above while I was placing all of the walls. This made it much easier.

**Lighting & Object Loading:** Lighting was not too much of a challenge for me to implement. The challenge I had with Object loading was mainly getting the texture of the 3D object to be applied to the object. To do this I had to use a MTLLoader as well. It took me some time to figure out how this worked, including how to import it properly, but I was eventually able to solve the problem.

**Challenges in Teamwork** (If applicable)

**Coordination and Consistency:** Not applicable

**Solution:** Not applicable

# Team Reflection (If applicable)

**Learning Outcomes:** Not applicable

**Challenges Overcome:** Not applicable

**Contribution Summary:** Not applicable

# References

List at least four references used by your team in the development of the project, including any tutorials, documentation, or external resources that contributed to your learning and project success.

<https://threejs.org/docs/#examples/en/loaders/OBJLoader.setMaterials>

<https://threejs.org/docs/#examples/en/controls/FirstPersonControls>

<https://stackoverflow.com/questions/39850083/three-js-objloader-texture>

<https://threejs.org/docs/#api/en/core/Raycaster>

<https://threejs.org/docs/#manual/en/introduction/Installation>

https://threejs.org/docs/#api/en/lights/SpotLight